

**DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 1/27/11 and 2/14/11 have been entered.

Claim 12 is cancelled. Claim 10 is withdrawn. Claims 1-9, 11 and 13-21 are under examination.

***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 1/27/11 was filed after the mailing date of the advisory action on 1/13/11. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. Foreign language references have only been considered to the extent that an English language Abstract or translation or statement of relevance has been provided to the Examiner.

**Withdrawn rejections:**

Applicant's amendments and arguments filed 1/27/11 and 2/14/11 are acknowledged and have been fully considered. Any rejection and/or objection not specifically addressed below is herein withdrawn.

The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set of rejections and/or objections presently being applied to the instant application.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9, 11 and 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessell (WO 00/71623 which is equivalent to US 2002/054999 filed

on IDS 5/20/10) and Flick (Cosmetic and Toiletry Formulations 2001, 2<sup>nd</sup> Edition Volume 8; page 285).

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Applicant claims:

1 (Currently Amended) A dispersion comprising particles of metal oxide dispersed in;

- g) a siloxane fluid; and and
- b) a dispersing agent comprising a mixture of polysiloxane molecules; wherein (i) the mixture of polysiloxane molecules comprises;
- (i) an average of from 0.1 to 3 carboxyl groups per molecule; and and
- (ii) the ratio of non-carboxyl group containing monomer units to carboxyl group containing monomer units in the polysiloxane molecules is in the range from 40 to 150:1.

**Determination of the scope and content of the prior art**

**(MPEP 2141.01)**

Kessel teaches a dispersion of metal oxide having an average particle size of less than 200 nm dispersed in a dispersing siloxane fluid medium wherein the metal oxide particles can be titanium or zinc oxide (claims 1 and 3). The particle size can be in the range of 30 to 100 nm (claim 5). **Sunscreen formulations** with a mixture of siloxanes is taught (page 10) and shown below:

**Phase A**

Cyclomethicone and trimethylsiloxysilicate (Dow Corning 749 Fluid)	7.5
Dimethicone (Dow Corning 200 Fluid)	7.5
Cyclomethicone and dimethicone copolyol (Dow Corning 3225c Formulation Aid)	10.0
Titanium dioxide dispersion produced above	15.0

**Phase B**

Glycerin	4.0
Sodium Chloride	1.0
Purified water/aqua	54.5
Preservative	0.5

Kessel teaches that the amount of metal oxide can be from 0.5 to 30 wt% of the composition and the dispersion contains at least 40 wt% particles of metal oxide (page 4, lines 20-21 and page 7, lines 26-28). Kessel teaches that the metal oxide will have an extinction coefficient for light in the visible range of wavelengths no greater than 10 litres per gram per cm (page 6, lines 5-8). Kessel teaches that any suitable siloxane fluid can be used and teaches the use of polydimethylsiloxane and substituted polydimethylsiloxanes as well as alternative fluids such as dimethylsiloxane linear oligomers or polymers such as phenyltrimethicone for use in the composition (page 4,

lines 4-6 and 22-27). Kessel teaches that the dispersion consists essentially of the ingredients (particles of metal oxide, siloxane fluid dispersing medium and dispersing agent (page 5, lines 23-25). Kessel teaches that the metal oxide particles are treated with water repellent materials and are therefore hydrophobic (page 4, lines 1-15 and claim 7).

Flick teaches the use of Monasil PCA in combination with titanium dioxide in sun compositions reproduced below for Applicant's benefit (page 285). The Examiner notes that Applicant also teaches Monasil PCA as a polysiloxane containing a carboxyl group which must intrinsically meet the limitations of instant claim 1 (see page 9, example 1 of the instant specification).

After Sun Soother with Aloe Vera

A refreshing creamy lotion which soothes, cools and moisturizes sun-dried skin.

<u>Ingredients:</u>	<u>Wt%</u>
A. Water	86.23
Phospholipid SV	3.0
Propylene Glycol	2.0
B. Monafax MAP 160	1.0
Cetyl Alcohol	2.0
Hexyl Laurate	1.0
Monasil PCA	2.0
C. AMP (95%)	0.35
D. Titanium Dioxide	0.4
E. Aloe Vera Gel 1:1	2.0

Procedure:

Combine Part A while heating to 70C. Separately, mix Part B while heating to 70C. Add Part B to Part A slowly with rapid agitation. Add Part C. Add Part D, homogenize, cool to 50C. Add aloe vera, color, fragrance and preservative. Package.

Typical Properties:

Appearance: White flowable lotion  
Viscosity: 23,400 cP  
pH: 6.1  
Formula F-836

**Ascertainment of the difference between the prior art and the claims**

**(MPEP 2141.02)**

1. The difference between the instant application and Kessel is that Kessel do not expressly teach a dispersing agent which is a mixture of polysiloxane molecules has a molecular weight in the range from 4000 to 15000 and has a number of carboxyl groups per molecule (0.1 to 3 or 0.8 to 2.5) or the number of non-carboxyl group containing monomer units (40 to 150:1) or from 30 to 200 as instantly claimed. This deficiency in Kessel is cured by the teachings of Flick.

2. The difference between the instant application and Kessel is that Kessel do not expressly teach a viscosity in the range from 0.2 to10 Pa.s.; or the polysiloxane.

3. The difference between the instant application and Kessel is that Kessel do not expressly teach a composition that consists of metal oxide, siloxane fluid and dispersing agent of claim 1.

**Finding of prima facie obviousness**

**Rational and Motivation (MPEP 2142-2143)**

1. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the composition of Kessel with is a mixture of polysiloxane molecules with the number of carboxyl groups per molecule (0.1 to 3 or 0.8 to 2.5) or the number of non-carboxyl group containing monomer units (40 to 150:1) or from 30 to 200 of instant claims 1, 8 and 9, produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Kessel clearly teach that any siloxane can be used with the only requirement being cosmetic acceptability and Flick teaches Monasil PCA for application to the skin which would be cosmetically acceptable. Applicant teaches Monasil PCA has carboxyl groups and must intrinsically have the instantly claimed limitations otherwise there would be an enablement problem. Therefore: "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Furthermore, addition of the Monasil PCA would intrinsically have more than 1 molecule present and thus read on a mixture of molecules in the absence of evidence to the contrary.

2. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the composition of Kessel with a viscosity in the range from 0.2 to 10 Pa.s. and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because obviously the composition of Kessel has some degree of viscosity but that value was not disclosed. The viscosity of a composition is clearly a result effective parameter that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal amount of each ingredient needed to achieve the desired viscosity. Thus,

absent some demonstration of unexpected results from the claimed parameters, the optimization of the viscosity would have been obvious at the time of applicant's invention.

3. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the composition of Kessel with composition that consists of metal oxide, siloxane fluid and dispersing agent of claim 1 and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Kessel already sets forth the concept of a composition with just metal oxide particles, siloxane medium and dispersing agent. Flick establishes Monasil PCA in sun compositions. It is thus no stretch of the imagination by the ordinary artisan to combine the compositions to arrive at the instant invention.

The U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that a subsequent applicant may present previously unmeasured characteristics such as the viscosity of the final sunscreen composition.

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of

ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**Response to arguments:**

Applicant asserts that there is confusion over the siloxane fluid dispersing medium with the siloxane dispersing agent because the term "any" is in reference to the siloxanes in the dispersing medium and not the dispersing agent. Respectfully, there is no confusion here. The claim language of Kessel is open to other ingredients including any siloxane. Whether one calls the additional siloxane a 'dispersing medium' or 'a dispersing agent' is merely semantics. The facts remain that the art suggests Monasil PCA for use in topical skin applications in combination with titanium dioxide. "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Applicant does not dispute that Monasil PCA reads on the instant dispersing agent. Applicant does not dispute that it is merely routine optimization to obtain the viscosity. Applicant does not argue synergy or unexpected results. Consequently, there is nothing surprising or special about the instant combination of ingredients. The principles of law state:

1. From MPEP 2141 I: "When considering obviousness of a combination of known elements, the operative question is thus "whether the improvement

is more than the predictable use of prior art elements according to their established functions." *KSR*, 550 U.S. at \_\_\_, 82 USPQ2d at 1396."

2. From MPEP 2143 A: "...all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination yielded nothing more than predictable results to one of ordinary skill in the art. *KSR*, 550 U.S. at \_\_\_, 82 USPQ2d at 1395; *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282, 189 USPQ 449, 453 (1976); *Anderson 's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 62-63, 163 USPQ 673, 675 (1969); *Great Atlantic & P. Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 152, 87 USPQ 303, 306 (1950)."

3. This rejection is based on the well-established proposition of patent law that no invention resides in combining old ingredients of known properties where the results obtained thereby are no more than the additive effect of the ingredients, *In re Sussman*, 1943 C.D. 518.

The facts remain that the instant 'dispersing agent' is already known in the art for use in topical compositions containing particles of metal oxide and nothing extraordinary has been shown about the instant combination of ingredients. Therefore it is merely ordinary innovation to combine the instant ingredients, which is just arbitrary selection of

known components and which requires no inventive skill by the ordinary artisan whatsoever.

Applicant fails to see how an after-sun formulation is used for the same purpose as a sunscreen formulation. Respectfully, both are applied to the skin and both contain titanium dioxide which is a sunscreen agent. The Examiner must give the art the broadest reasonable interpretation and the fact remains that both compositions provide sunscreen protection by virtue of the fact that both contain titanium dioxide.

None of Applicant's arguments are persuasive and the claims remain rejected.

***Conclusion***

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERNST V. ARNOLD whose telephone number is (571)272-8509. The examiner can normally be reached on M-F 7:15-4:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brain Kwon can be reached on 571-272-0581. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ernst V Arnold/  
Primary Examiner, Art Unit 1613